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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,218	02/17/2004	Xiao-Peng Liang	WJT08-0022D1 (JSF001-0076)	9463
7590	02/10/2005		EXAMINER	
William J Tucker 14431 Goliad Drive Box #8 Malakoff, TX 75148			JONES, STEPHEN E	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/780,218

Applicant(s)

LIANG ET AL.

Examiner

Stephen E. Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/17/04</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of species I in the reply filed on 11/12/04 is acknowledged.

The restriction requirement is deemed moot since all of the claims read on the elected invention.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. in combination with Dimos et al., Mee, and Ishizuka et al.

Miyazaki (Fig. 34) teaches a high frequency filter including: a main microstrip transmission line (31) (Claim 5); conductor ribbons (14) are coupling mechanisms (which can be considered inductive loops since ribbon conductors have inductance values and have an arc shape (such as shown in Fig. 34) which meets the term loop in its broadest meaning) (Claim 4) to connect microstrip resonators (110) having capacitors (13); the resonators are  $\frac{1}{4}$  wavelength apart (Claim 6) (see Col. 3, lines 38-42), and the filter is capable of notches (e.g. see Fig. 18).

However, Miyazaki does not teach that the capacitors are electrically tunable capacitors such that the resonators are tunable, that the capacitors are tunable dielectric varactors (Claim 2); that the varactors have a substrate with a first dielectric constant and having generally a planar surface; a tunable dielectric layer having a second dielectric constant greater than said first dielectric constant; and first and second electrodes positioned on a surface of the tunable dielectric layer opposite the generally planar surface of the substrate and a gap separating the electrodes (Claim 3); that the filter is two filters (as transmit and receive filters) each used in a wireless telephone diplexer coupled to an antenna (Claim 1).

Dimos et al. discloses a tunable varactor (Fig. 9) which comprises a substrate having a first dielectric constant and has generally a planar surface; a tunable dielectric layer having a second dielectric constant greater than said first dielectric constant; and first and second electrodes positioned on a surface of the tunable dielectric layer opposite the generally planar surface of the substrate and a gap separating the electrodes (e.g. see Col. 7, lines 4-10 and Col. 8, lines 43-50).

Mee provides the general well-known teaching of providing transmit and receive circuits in a diplex arrangement including filters.

Ishizuka provides the general well-known teaching of using a transceiver in a mobile phone.

It would have been considered obvious to one of ordinary skill in the art to have substituted tunable dielectric varactors such as taught by Dimos in place of the fixed capacitors in the Miyazaki filter, because it would have provided the advantageous benefit of variable capacitance instead of fixed capacitance and thus tunability of the resonators of the filter, thereby suggesting the obviousness of such a modification.

Furthermore, it would have been considered obvious to one of ordinary skill in the art to have used the filters in a wireless phone having a diplexer (such as taught by Miyazaki and Mee), because it would have provided a well-known filter means having the advantageous benefit of a common/shared antenna of the diplexer between the receive and transmit circuits, thereby suggesting the obviousness of such a modification.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zappala in combination with Mee and Ishizuka et al.

Zappala (Fig. 4) teaches a notch filter connected to an antenna including a bandpass filter between a termination and a circulator.

However, Zappala does not explicitly teach that the filter is used in the transmit and receive sides of a diplexer circuit of a wireless phone.

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Mee provides the general well-known teaching of providing transmit and receive circuits in a duplex arrangement including filters.

Ishizuka provides the general well-known teaching of using a transceiver in a mobile phone.


It would have been considered obvious to one of ordinary skill in the art to have included two notch filters such as taught by Zappala in a duplex circuit of a wireless phone such as taught by Mee and Ishizuka, because it would have provided a well-known RF transmit and receive filter means for a wireless phone having the advantageous benefit of a common/shared antenna of the diplexer between the receive and transmit circuits, thereby suggesting the obviousness of such a modification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEJ



STEPHEN E. JONES  
PRIMARY EXAMINER